

Debt Sustainability Assessment: In normal and crisis times Cinzia Alcidi & Daniel Gros



Motivation and context



- Request of the European Parliament to "review and compare, on the basis of the available information, the IMF, the COM, the ECB and the ESM models and assumptions underlying their respective DSAs"
- Underlying issue: difference in assessment of sustainability of the Greek debt made by the IMF and the European Commission



Avant propos: general background

Two issues to keep in mind

- Why should sustainability be a problem? Interest rates < growth rate, secularly (Schularick) and today. (Need 'something else' to create sustainability problem outside 'excessive' primary deficits.)
- 2. Domestic versus foreign (held) debt. Does it make a difference? (Issue rarely considered in real life DSA.)



Domestic Debt vs Foreign Debt

Importance of public debt depends crucially on whom is it owed to:

- Domestic residents: not net debt at the level of society (higher risk premium no impact on aggregate consumption: bond holders = tax payers). Defaults on domestic debt rare!
- Foreigners: debt service = transfer (requires net exports, i.e. usually a reduction in consumption).



Domestic Debt: What if held via financial institutions?

- Domestic debt often held by financial institutions (banks):
- Makes default more costly (can have haircut only if deposits cut or banks bankrupt). Defaults on domestic debt rare!
- In euro area: difference commercial banks and national central bank? Banking Union with or without EDIS?
- If held by national central bank (PSPP)? Probability of default (PD) low, but LGD high.

Why bother with DSAs? Financing conditions for governments remain (and can be expected to remain) very favorable (i<<g)



Feed-back mechanism on risk premium and debt levels:

CE PS

Interest rate = risk free + risk premium (debt/GDP)



Illustration: Dynamic evolution of debt-GDP ratio from different starting levels - IMF assumption

Source: own calculations assuming 3% primary surplus, risk free rate equal to growth rate and risk premium increasing with 4 basis points for every percentage point increase in debt ratio above 60% of GDP **Note**: D0 110 stands for Debt at time 0, equals 110% of GDP, D0 120 stands for Debt at time 0, equals 120% of GDP etc.

How to compare real life DSAs



- 1. Focus on IMF and European Commission
 - The only 2 institutions with a formal and official DSA
- 2. Distinguish different functions of the DSA
 - Early warning signal of vulnerability in normal times
 - Key support decision tool in the context of provision of financial assistance – crisis times:
 - 1. IMF: For balance of payment crisis potentially in any country of the world
 - 2. Commission: Financing problems of sovereigns of the euro area
- 3. Consider different institutional perspective and constituencies
- 4. Compare methodologies

Standard elements of DSAs



- 1. DSAs is about future path evolution of debt and the assessment of the ability/willingness of a government to service it.
 - Debt service ability is judged solely by ratios to GDP! Might be misleading as there are differences in ability of governments to extract revenues from economy.
- 2. Future debt patterns are derived from an accounting relations which link 3 variables (and their future values):
 - economic growth,
 - interest rate on public debt,
 - fiscal balance (and fiscal risks)
- 3. Assumptions about future values must be realistic and should take feedback effects among them.

Differences IMF - Commission

	IMF	Commission
Time horizon	5 years standard	10 years - 'up to 50'
Repayment terms	Short to medium term	Medium to (very) long term
Interest rate	Penalty rates (up to 300 bps)	Concessional (risk free)
Explosive feed back parameter	Interest rate = risk free + 0.04 *debt/GDP above 60 % (Plus growth function of debt(?))	Interest rate = risk free + 0.03 *debt/GDP above 60 %
Incentives/governa nce	Remote, technical	Spill-overs, political
Cost of errors	Cost of type II error (false negative signal of sustainability) not considered: not granting support when debt would have been sustainable.	Cost of type I error (false positive signal) not considered: granting support when debt is not sustainable.

The IMF general approach



- Long experience with DSA but mostly in EMEs
- Greece was special:
 - advanced economy, not a BoP crisis but fiscal crisis and constraints linked to the euro
- 2011 a modernization of DSA framework
- The framework is implemented using a standardized template:
 - Routine exercise under Art.4 Consultation
 - The time horizon: 5 years
 - GDP growth: from WEO projections
 - Assumptions on interest rates: market data and the literature;
 - Assumptions on primary balance are based on the no policy change + historical evidence + political feasibility.
 - Baseline, alternative scenarios and stochastic simulations



The DSA in the European context

- Under the SGP: assessment of EU MS' public debt developments is part of fiscal surveillance
- Under the ESM Treaty: provision of financial assistance to MS experiencing financing problems is conditional to a favourable DSA by the European Commission, in liaison with the ECB, and possibly the IMF.
 - DSA is also required for the design of policy conditionality (adjustment programme).

The Commission's approach in normal times



- Annual report Debt Sustainability Monitor.
- Purpose: assess vulnerabilities and risks to debt sustainability
 - A lot of similarities with the IMF and few differences
- Focus on different times horizons (short, medium, long) and many indicators considered
- Long list of scenarios (including the SGP one) with deterministic projects and stochastic simulations
- Heat maps to spot the risks
- If a country is found vulnerable, according a list of criteria is enhanced DSA

GFN as complement indicator to DSA (I)



- GFNs = amount a government needs to refinance in the market
 - indicator of vulnerability especially in turbulent times
- GFN is a flow variable, different from a typical DSA, which focuses in on the path of the debt to GDP ratio, a stock variable.
- Technically, for each year GFNs= sum of the public debt falling due and the current deficit.
- In a long run perspective, GFN driven by the interplay between the debt to GDP ratio and the average maturity of public debt.
- This has two implications (if debt outstanding is large):
 - Small surpluses are unlikely to reduce GFNs in a significant way
 - In the short term small deficits are unlikely to increase GFNs.

GFN as complement indicator to DSA (II)



- As a rule of thumb, GFN as % of GDP is determined simply by the debt to GDP ratio divided by the average maturity of outstanding debt.
- <u>Both IMF and EC seem to assume that GNF at 20% is a sort of</u> <u>threshold for signalling vulnerability</u>
- Lending conditions can affect GNF
- For IMF the impact on the GFNs is usually marginal:
 - This is due to the limited size of programs and its standard terms, which are much more short term
 - Hoverer, given that IMF credits have to be repaid quickly, repayments can contribute significantly to GFNs within a decade.
- ESM does not have any formal limit and its longer term financing can affect significantly GFN: the case of Greece

DSA as decision-making tool in distress situations



- In principle straightforward:
 - ESM: If not sustainable no support without haircut
 - IMF, more nuanced: debt must be sustainable with high probability.
- Key issue in all cases: sustainability always uncertain.

Ex-ante and ex-post debt sustainability



Given the high uncertainty surrounding DSA in financial crises, it becomes important to consider what would be the cost if the DSA turns, ex-post, out to have been wrong.

	Ex-post	
Ex-ante	Debt was not sustainable	Debt was sustainable
Debt judged not sustainable => Private sector involvement (PSI) needed for ESM support	ESM support granted after haircut for private sector, program successful if PSI large enough	<u>Cannot be observed.</u> ESM support granted after haircut for private sector (PSI), program successful unless cost of PSI very high. <u>Cost of</u> <u>default for home country very</u> <u>high, low for</u> public sector of rest of <u>EA</u> , but only if contagion (transitory or permanent) low.
Debt found sustainable	ESM support granted, but program might go astray (unless conditionality changes trajectory), with losses for ESM (and private sector if any remain): <u>Cost of eventual default for home country very high,</u> <u>potentially also for rest of EA if</u> <u>there is contagion</u>	ESM support granted and program successful. Ireland, Portugal, Cyprus

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Real world complications

- With (usually) positive slope to yield curve: marginal cost of debt < long term rate.
- Works twice:
- Risk free rate and risk premium, both have positive slope!
- Example: Italy today
- 10 year rate IT = 2.7 % (spread 2.5)
- 2 year rate = 0.5 %
- Average = 1.6 % (WAM for Italy 7 years) < nominal growth
- (October 2018: 10 year rate 3.2 and 2 year 1.8 => average 2.5 %)
- => average cost of new debt in Italy below 1 % in 2017!

The case of Italy: IMF and EC analysis



Italy 2017 IMF Art. 4:

- Primary balance which can stabilize debt?
 - Low uncertainty on growth, which is low and below interest rate
 - High uncertainty on interest rates, also linked to exit from QE
 - Hp: above 3% after 2019, negative feedback lead to 3.8 in 2022 debt at 128% in 2022
 - Large and persistent primary balance necessary to stabilize debt????
 - Not credible assumption given the track record
 - 2% surplus credible but leads to debt at 138% by 2022
 - High risks and no decline in debt by 2022

Commission 2018 DSM:

- Similar to IMF snow ball effect will contribute to increase debt
 - Hp: market interest rates 3% over the next 10 years
 - Impact on debt of 9 pp of GDP
- Even full compliance with SGP would keep debt above 90% in 2028.
 - Compliance with SGP not credible given the track record
 - Debt to GDP unchanged in the next 5 years

Interest payments as % GDP



The case of Greece: A comparison of DSAs in times of crisis



- IMF: Greek debt-to-GDP on an explosive pattern.
- EC : Greek debt-to-GDP expected to fall under all scenarios
- What can explain the difference?
 - hypotheses on the interest rate and feed back look are crucial.
- **IMF**: Greece assumed to access markets by end-program at an initial rate of 6%, reflecting a prolonged absence from markets, a weak track record on delivering fiscal surpluses, and a substantial debt overhang. This rate is consistent with a risk-free rate of 1-1½ percent in 2018 and a risk premium of 450-500 bp.
 - The rate is expected to fall/rise by 4bp for every one percentage point decline/increase in debt-to-GDP ratio, fluctuating between a ceiling of 6% (to avoid non-linearity and reflect the likelihood of loss of market access at high levels of debt/interest rates) and a floor of 4½ percent (consistent with a small long-run risk free premium of 75 basis points).
- **Commission**: market rates, modelled at the expected risk-free rate plus a risk premium, expected to reach 5.1% in 2019, to increase to 5.5% in 2021 in line with the projected increase in the risk free rate, and to slowly converge to 4.3% by 2060 thereafter. The average market re-financing rate after the end of the programme averages 4.9%.

Risk premium and debt levels: A technical comparison



Dynamic evolution of debt-GDP ratio from differentDynamic evolution of debt-GDP ratio from differentstarting levels - IMF assumptionstarting levels - European Commission assumption



Source: own calculations assuming 3% primary surplus, risk free rate equal to growth rate and risk premium increasing with 4 basis points for every percentage point increase in debt ratio above 60% of GDP (IMF assumption, left hand panel) or increasing by 3 basis points for every percentage point increase in debt ratio above 60 % of GDP (Commission assumption, left hand panel) **Note**: D0 110 stands for Debt at time 0, equals 110% of GDP, D0 120 stands for Debt at time 0, equals 120% of GDP etc.

Conclusions:

Differences IMF - Commission

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Cost of errors	Cost of Type II error not considered: (not granting support when debt would have been sustainable).	Cost of Type I error not considered (granting support when debt is not sustainable). <i>More likely to grant</i> <i>support</i>

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Conclusions based on the Greek experience

- The DSA of the IMF is designed to find out whether a country could finance itself on the market after a few years and with only limited medium term financing at rates which incorporate a significant premium.
 - Priority: Repayment of the loan is prior objective.
- The first EU support to Greece was designed following a similar approach. Over time it has evolved towards the question what financing package would render the debt burden sustainable in the very long run.
 - Priority: Ensuring future sustainability rather than quick repayment of loans



Thank you for your attention!

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